IN THE CLAIMS:

Please cancel claims 39-48 without prejudice to applicants' right to file a divisional application with respect thereto.

Please amend claims 23-29, 32-38 as follows:

23. (Five Times Amended) A thin film transistor comprising:

a semiconductor layer [having an intrinsic or substantially intrinsic channel region] formed on an insulating surface;

a gate insulating layer contacting said semiconductor layer; and

a gate electrode adjacent to said semiconductor layer with said gate insulating layer therebetween,

wherein said semiconductor layer comprises a crystalline silicon semiconductor layer containing oxygen, nitrogen or carbon at a concentration 1 x 10^{19} atoms/cm^3 or less wherein said semiconductor layer shows a Raman shift at a wavenumber of 512 cm^{-1} or higher.

~~24~~ 24. (Twice Amended) The thin film transistor of claim ~~23~~ wherein said semiconductor layer is formed [on an insulating surface of a substrate] by annealing said semiconductor layer in a hydrogen atmosphere.

25. (Five Times Amended) A thin film transistor comprising:

a semiconductor layer [having an intrinsic or substantially intrinsic channel region] formed on an insulating surface;

a gate insulating layer contacting said semiconductor layer; and

a gate electrode adjacent to said semiconductor layer with said gate insulating layer therebetween,

wherein said semiconductor layer comprises a crystalline silicon semiconductor layer containing oxygen, nitrogen or carbon at a concentration 1 x 10^{19} atoms/cm^3 or less and wherein a ratio of a full band width at half maximum (FWHM) of a Raman peak of said semiconductor layer to a FWHM of a Raman peak of a single crystalline silicon is less than 3.

~~26.~~ (Twice Amended) The thin film transistor of claim ~~25~~ wherein said semiconductor layer is formed [on an insulating surface of a substrate] by annealing said semiconductor layer in a hydrogen atmosphere.

27. (Five Times Amended) A thin film transistor comprising:

a semiconductor layer [having an intrinsic or substantially intrinsic channel region] formed on an insulating surface;

a gate insulating layer contacting said semiconductor layer; and

a gate electrode adjacent to said layer with said gate insulating layer therebetween,

wherein said semiconductor layer comprises a crystalline silicon semiconductor layer containing oxygen, nitrogen or carbon at a concentration 1 x 10^{19} atoms/cm^3 or less and wherein a peak intensity ratio Ia/Ic of said semiconductor layer is less than 0.4 where Ia represents a Raman peak intensity at a wavenumber of 480 cm^{-1} for an amorphous component of said semiconductor layer and Ic represents a Raman peak intensity at 521 cm^{-1} for a single crystalline silicon.

K4 6 5

28. (Twice Amended) The thin film transistor of claim 27 wherein said semiconductor layer is formed [on an insulating surface of a substrate] by annealing said semiconductor layer in a hydrogen atmosphere.

32. (Six Times Amended) A thin film transistor produced by a process comprising the steps of:

forming on an insulating surface a[n intrinsic or substantially intrinsic] semiconductor film having a region to become a channel region of the transistor, said semiconductor film containing therein carbon, nitrogen or oxygen at a concentration of 1 x 10^{19} atoms/cm^3 or less, said semiconductor film comprising a material selected from the group consisting of germanium and a germanium silicon alloy; and

K7 irradiating said [entire] semiconductor film with a laser beam or a light having a strength equivalent to the laser beam with melting the semiconductor film to increase the degree of crystallinity thereof, and

annealing the semiconductor film after the irradiation in a hydrogen atmosphere.

33. (Four Times Amended) A thin film transistor comprising:

a semiconductor layer [having an intrinsic or substantially intrinsic channel region] formed on an insulating surface;

a gate insulating layer contacting said semiconductor layer; and

a gate electrode adjacent to said semiconductor layer with said gate insulating layer therebetween;

wherein said semiconductor layer comprises a non-single crystalline silicon semiconductor layer containing oxygen, carbon or nitrogen at a

34

concentration 1 x 10^{19} atoms/cm^3 or less, which shows a Raman shift at a wavenumber of 512 cm^{-1} or higher.

34. (Four Times Amended) A thin film transistor comprising:

a semiconductor layer [having an intrinsic or substantially intrinsic channel region] formed on an insulating surface;

a gate insulating layer contacting said semiconductor layer; and

a gate electrode adjacent to said semiconductor layer with said gate insulating layer therebetween,

wherein said semiconductor layer comprises a non-single crystalline silicon semiconductor layer containing oxygen, carbon or nitrogen at a concentration 1 x 10^{19} atoms/cm^3 or less and wherein a ratio of a full band width at half maximum (FWHM) of a Raman peak of said semiconductor layer to a FWHM of a Raman peak of a single crystalline silicon is less than 3.

Cont'd 1C7

35. (Four Times Amended) A thin film transistor comprising:

a semiconductor layer [having an intrinsic or substantially intrinsic channel region] formed on an insulating surface;

a gate insulating layer contacting said semiconductor layer; and

a gate electrode adjacent to said semiconductor layer with said gate insulating layer therebetween,

wherein said semiconductor layer comprises a non-single crystalline silicon semiconductor layer containing oxygen, carbon or nitrogen at a concentration 1 x 10^{19} atoms/cm^3 or less and wherein a peak intensity ratio Ia/Ic of said semiconductor layer is less the 0.4 wherein Ia represents a

Raman peak intensity at a wavenumber of 480 cm^{-1} for an amorphous component of said semiconductor layer and Ic represents a Raman peak intensity at 521 cm^{-1} for a single crystalline silicon.

36. (Four Times Amended) A thin film transistor produced by a process comprising the steps of:

forming on an insulating surface a[n intrinsic or substantially intrinsic] semiconductor film having a region to become a channel region of the transistor, said semiconductor film containing carbon at a concentration 1 x 10^{19} atoms/cm^3 or less and comprising a material selected from the group consisting of germanium and a germanium silicon alloy; and

irradiating the semiconductor film with a laser beam or a light having a strength equivalent to the laser beam to increase the degree of crystallinity of the semiconductor film,

wherein said semiconductor film shows a Raman shift at a wavenumber of 512 cm^{-1} or higher.

37. (Four Times Amended) A thin film transistor produced by a process comprising the steps of:

forming on an insulating surface a[n intrinsic or substantially intrinsic] semiconductor film having a region to become a channel region of the transistor, said semiconductor film containing nitrogen at a concentration 1 x 10^{19} atoms/cm^3 or less and comprising a material selected from the group consisting of germanium and a germanium silicon alloy; and

irradiating the semiconductor film with a laser beam or a light having a strength equivalent to the laser beam to increase the degree of crystallinity of the semiconductor film,

wherein said semiconductor film shows a Raman shift at a wavenumber of 512 cm^{-1} or higher.

38. (Four Times Amended) A thin film transistor produced by a process comprising the steps of:

forming on an insulating surface a[n intrinsic or substantially intrinsic] semiconductor film having a region to become a channel region of the transistor, said semiconductor film containing oxygen at a concentration 1 x 10^{19} atoms/cm^3 or less and comprising a material selected from the group consisting of germanium and a germanium silicon alloy; and

irradiating the semiconductor film with a laser beam or a light having a strength equivalent to the laser beam to increase the degree of crystallinity of the semiconductor film,

wherein said semiconductor film shows a Raman shift at a wavenumber of 512 cm^{-1} or higher.

Please add new claims 49-59 as follows:

--49. A thin film transistor comprising:

a semiconductor layer formed on an insulating surface;

a gate insulating layer contacting said semiconductor layer; and

a gate electrode adjacent to said semiconductor layer with said gate insulating layer therebetween,

wherein said semiconductor layer comprises a material selected from the group consisting of germanium and a germanium silicon alloy, and containing oxygen, nitrogen or carbon at a concentration 1×10^{19} atoms/cm^3 or less and wherein said semiconductor layer shows a Raman shift at a wavenumber of 512 cm^{-1} or higher.

50. A thin film transistor according to claim 23 wherein said semiconductor layer is intrinsic or substantially intrinsic

51. A thin film transistor according to claim 25 wherein said semiconductor layer is intrinsic or substantially intrinsic.

52. A thin film transistor according to claim 27 wherein said semiconductor layer is intrinsic or substantially intrinsic.

53. A thin film transistor according to claim 32 wherein said semiconductor film is intrinsic or substantially intrinsic.

54. A thin film transistor according to claim 33 wherein said semiconductor layer is intrinsic or substantially intrinsic.

55. A thin film transistor according to claim 34 wherein said semiconductor layer is intrinsic or substantially intrinsic.

56. A thin film transistor according to claim 35 wherein said semiconductor layer is intrinsic or substantially intrinsic.